

REMARKS

As a preliminary matter, Applicants appreciate the Examiner's allowance of claims 5-9.

The Abstract stands objected to as failing to include language directed to the magnetic storage apparatus. In response, Applicants amended the Abstract to reference the magnetic storage apparatus, and respectfully request withdrawal of the objection on this basis.

Claim 3 stands objected to because of an informality. More specifically, the word "system" is used twice in line 4 of the claim. In response, Applicants amended the claim by deleting "system" from the claim as suggested by the Examiner, and request withdrawal of the objection on this basis.

Claims 1-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (U.S. Patent No. 5,815,342) in view of Fukuichi (JP 02-227814). Applicants traverse the rejection because there is no motivation to combine the references since the backing layer of Fukuichi is magnetized perpendicularly to the base.

It is the object of the present invention to provide a magnetic recording medium of two-layer type comprising a magnetic recording layer and a backing layer assisting recording in the magnetic recording layer, wherein it is possible to suppress the noise originating from the backing layer at the time of reproducing.

In order to achieve this object, the present invention provides a vertical magnetic recording medium comprising at least a vertical magnetic recording layer and a backing layer backing the vertical magnetic recording layer. The backing layer has an in-

plane magnetization and is formed of a ferrimagnetic material having a compensation temperature in the vicinity of a recording/reproducing temperature in which reproducing of magnetic information is made from the vertical magnetic recording layer, as recited in claim 1.

According to the present invention, it is possible to control the backing layer such that the backing layer has a magnetization when magnetic information is recorded into the perpendicular magnetic recording layer, and also such that the backing layer does not have magnetization when magnetic information is read out from the perpendicular magnetic recording layer.

In the outstanding Office Action, the Examiner combines Akiyama and Fukuichi. Akiyama teaches a vertical magnetic recording medium including an in-plane soft-magnetic backing layer and a perpendicular magnetization recording layer formed thereon. Akiyama fails to teach a “compensation temperature”, as noted by the Examiner. Fukuichi is relied on for such a teaching.

Fukuichi discloses a perpendicular magnetic recording structure that uses a ferrimagnetic layer underneath a perpendicular magnetic recording layer. The ferrimagnetic layer of Fukuichi is provided for the purpose of aligning the easy axis of magnetization of the magnetic recording layer formed thereon in the direction perpendicular to the plane of the base material.

However, in page 2, lower right column of Fukuichi, there is a description that the ferrimagnetic layer is magnetized perpendicularly to the base by applying a magnetic field at the time of formation of the vertical magnetic recording layer, and the magnetization of the

ferrimagnetic layer tends to cause alignment of the easy axis the magnetization of the CoCr particles deposited thereon in the direction perpendicular to the base.

Thus, the ferrimagnetic layer of Fukuichi is a perpendicularly magnetized layer, not an in-plane magnetization layer, contrary to the present invention and contrary to Akiyama. That is, the ferrimagnetic layer of Fukuichi would not assist in the recording of the magnetic information to the magnetic recording layer (see Applicants' specification pg. 8, line 2 et seq.).

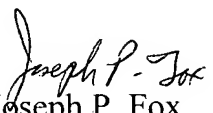
Thus, a person skilled in the art would not be motivated to replace the in-plane magnetization backing layer of Akiyama with the perpendicular magnetized backing layer of Fukuichi, as suggested by the Examiner. For this reason, withdrawal of the §103 rejection is respectfully requested.

For all of the foregoing reasons, Applicants submit that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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